IN THE SPECIFICATION:

On page 5, after paragraph ¶[0019], please add the following:

--Fig. 4 illustrates an LCD device 99' including a top over-layer substrate 100' having a flat surface profile and flat alignment film layer 120' formed thereon according to an alternate embodiment of the invention; and

--Fig. 5 illustrates a cross-sectional view of a portion of the alternate LCD device 200' corresponding to device 200 of Fig. 3, however, including the top over-layer substrate 212 and corresponding alignment layer 216' formed thereon having a flat surface profile in an alternate embodiment of the invention; and,

Fig. 6 depicts an LC D molecule 301 sitting inside a groove alignment layer in a direction parallel to the ion beam bombardment direction parallel to the grooves, the molecule having a lower potential energy than molecule 302 that is sitting on a ridge of the groove.--

On page 5, please amend paragraph ¶[0021] as follows:

-- [0021] In the embodiment depicted in Figure 2, the grooved-surface 12 has a sinusoidal profile 22. Given a sinusoid period of about 1.0 μm and the amplitude of about 0.3 μm, the surface area for the sinusoidal grooved-surface is 1.67 times surface of a flat surface. For a given surface anchoring energy, the total surface energy of a grooved surface is about 60% higher than a flat surface. Figure 2 depicts the LCD device 99 with a grooved under-layer surface 12 having a sinusoidal profile 22 and a DLC or inorganic material layer alignment film 20, and additionally an over-layer substrate 100 is shown provided having a grooved-surface 112 of a sinusoidal profile 122 and includes a DLC or inorganic material layer alignment film 120. It is understood thus, that an LCD device 99 of the invention may include bottom and top substrates that both have grooved surfaces and DLC or inorganic material layer alignment films 20, 120, or, have one surface (top or bottom) that may be grooved with a DLC or inorganic layer alignment film. For instance, Fig. 4 illustrates an

LCD device 99' including a top over-layer substrate 100' having a flat surface profile and flat alignment film layer 120' formed thereon according to an alternate embodiment of the invention. Besides DLC, other inorganic material layer alignment films include SiN_x, hydrogenated amorphous silicon, SiC, SiO_2, glass, Al_2O_3, CeO_2, SnO_2, $ZnTiO_2$, $InTiO_2$, $InZnO_2$, and other organic or inorganic dielectric materials and conducting materials.

On page 6, please amend paragraph ¶[0022] as follows:

--[0022] As shown in Figure 2, the effect of providing a grooved surface 12 is that the liquid crystal (LC) molecules 30 align parallel to the grooves rather than perpendicular to the grooves because the latter alignment requires a higher free energy than the former. For the example embodiment depicted in Figure 2, the calculated energy for molecules to align perpendicular to the grooves is approximately 3.4 times higher than that for the molecules to align parallel to the grooves. To illustrate, Fig. 6 depicts an LC D molecule 301 sitting inside a groove alignment layer in a direction parallel to the ion beam bombardment direction parallel to the grooves, the molecule having a lower potential energy than molecule 302 that is sitting on a ridge of the groove.

On page 8, please amend paragraph ¶[0029] as follows:

--[0029] Figure 3 illustrates a cross-section of the LCD device structure 200 having homogeneous alignment of LC molecules formed according to the method of the current invention. As shown in Figure 3, the LCD device 200 includes a both top 212 and bottom 202 substrates, the bottom substrate 202 having formed therein a matrix of thin-film transistors (TFT) devices (not shown) having formed pixel electrodes for receiving the data signals associated with the individual pixels. The top substrate 212 may comprise electrode with or with out color filter elements. Associated and formed on each bottom, top substrate is a formed a respective grooved underlayer 204, 214 and a corresponding alignment layer 206, 216 formed thereon. In view of Fig. 3, corresponding alignment layer 206 and 216 both have a corresponding grooved surface profile as the underlying respective substrates 202, 212 upon

which the alignment layers are formed. As shown in Figure 3, the grooved underlayer and alignment layer is of a non-uniform profile. Deposited between the respective formed top and bottom substrate, underlayer and alignment layer structures are the liquid crystal molecules 210 which are shown uniformly oriented into the plane of the figure, in a manner parallel to the formed grooves of the underlayer and alignment layers. As shown in Figure 3, portions of the device include a sealant material 215, 220 that is formed between the substrates according to known techniques for sealing the LC molecules between the two substrates.

On page 8, please add the following after paragraph ¶[0029]:

--Fig. 5 illustrates a cross-sectional view of a portion of the alternate LCD device 200' corresponding to device 200 of Fig. 3, however, including the top over-layer substrate 212 and corresponding alignment layer 216' formed thereon having a flat surface profile in an alternate embodiment of the invention.--